ANNUAL REPORT
to the
GOVERNOR and GENERAL ASSEMBLY
on the

SOLID WASTE MANAGEMENT ACT OF 1991

Fiscal Year 2009-2010

Tennessee Department of Environment and Conservation
Division of Solid Waste Management
Solid Waste Assistance Programs
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Introduction

The Solid Waste Management Act of 1991 requires that an annual report on Tennessee's Solid Waste Management System (SWMS) be prepared and submitted to the Governor and General Assembly as directed by Tennessee Code Annotated (TCA) §68-211-873. The Department of Environment and Conservation (TDEC) Division of Solid Waste Management (SWM) and the Office of Environmental Assistance (OEA) have collaborated to produce the 2009-2010 Tennessee Solid Waste Management Annual Report.

Tennessee's SWMS is intended to further the protection of public health and enhance the quality of the environment. Through the SWMS, TDEC acts as a facilitator for waste reduction by collaborating with county and municipal governments, industry and contract agencies. The goal is to coordinate the activities of these groups to maintain adequate health and safety standards, protect the environment through facility design and location, and maximize the utilization of resources that would otherwise be disposed at solid waste facilities

Overview & History

Concern for solid waste issues has been prevalent since the United States Congress enacted the Solid Waste Disposal Act of 1965. During the 1980s, public interest in solid waste management rose to new levels because of shrinking landfill capacity, increasing disposal costs, and opposition to the siting of new landfills. To address this, the Federal government enacted the Resource Conservation and Recovery Act. Subtitle D of this law provides regulatory exemptions and other incentives that encourage the reuse of recoverable material (United States Environmental Protection Agency, Office of Solid Waste, Communications, Information, & Resources Management Division ([US EPA OSW CIRMD], 1998, p. II-1).

Coincidentally, in the late 1980s, local governments in Tennessee were faced with the expensive and often controversial challenge of finding environmentally safe disposal capacity for municipal solid waste. Lawmakers, public administrators, technical assistance providers, and industry collaborated to find a solution. The consensus was that long-range planning was essential for local governments to meet State and Federal mandates regarding modern, safe municipal solid waste disposal. The Act, a direct result of these discussions, placed as one of its major roles the development of tools to help local governments, industry, and the public make better choices in dealing with solid waste issues ([US EPA OSW CIRMD], 1998, p. II-2).

By 1995, the Environmental Protection Agency (EPA) had developed an integrated, hierarchical approach to waste management ([US EPA OSW CIRMD], 1998, p. II-3). This was known as the "Integrated Solid Waste Management System." To mirror the waste management system established by EPA, TDEC developed its own SWMS. Tennessee's SWMS is intended to facilitate regulatory activities and enforcement by TDEC. The Act challenged each Region to reduce the amount of solid waste disposed in Class I landfills and incinerators by 25%. Originally, the Act set 1989 as the base year for calculation of the 25% solid waste reduction goal and December 31, 1995, was set as the date to meet the reduction goal (Solid Waste Management Act, Plan for Disposal Capacity & Waste Reduction, 1991).

The Act set forth specific provisions to further this waste reduction goal. One provision was the establishment of the Solid Waste Management Fund (the Fund). The Fund was established to provide financial support in addressing waste avoidance, waste reduction, recycling, composting, and household hazardous waste disposal. As identified by the General Assembly, education, technical assistance, and economic incentives are the tools to be used in support of this mission (Solid Waste Management Act, Solid Waste Management Fund, 1991).

Monies for the Fund are generated from a $0.90 surcharge assessed on every ton of municipal solid waste disposed in Tennessee's Class I landfills or incinerators. Amendments in 2007 extended the surcharge and increased it from the previous rate of $0.75 cents per ton to the existing $0.90 per ton. In addition to the disposal surcharge going to the Fund, retail tire dealers collect a pre-disposal fee for each new tire sold in Tennessee. Amendments in 2007 increased this amount from $1.00 per tire to the current rate of $1.35. Tire dealers continue to keep 10 cents per tire to cover administrative costs. The remaining $1.25 is remitted to the Department of Revenue to be deposited into the Fund (Solid Waste Management Act, Expenditure of Revenues, 1991).

The Act was amended in 1999 and established December 31, 2003, as the date for Municipal Solid Waste Planning Regions (solid waste planning entities) to meet the 25% per capita (by weight) reduction and diversion goal for municipal solid waste (MSW) disposed in Class I landfills or incinerators. The 1999 amendment established 1995 as the new base year (Solid Waste Management Act, Solid Waste Reduction & Diversion Goal, 1991). Additionally, the 1999 amendment allowed for the economic growth of a region to be used as one factor in determining compliance with the 2003 goal (Solid Waste Management Act, Basis for Goal, 1991). Each Region that did not meet the December 31, 2003 deadline was required to have its solid waste program qualitatively assessed to determine if a "good faith" effort was made toward achieving the goal. Rules specifying the methodology to be used for the qualitative assessment of regional solid waste programs were fully promulgated August 6, 2006. The first qualitative assessments were completed in the winter of FY 2008-09.

Amendments to the Act in 2007 deleted the December 31, 2003 deadline for meeting the 25% waste reduction and diversion goal making it an on-going goal. These amendments added a requirement for the regional solid waste plans to include a management plan for disaster debris; clarified sanctions for noncompliance with submittals of regional solid waste plans and updates; added language allowing TDEC to award grants for establishment of permanent household hazardous waste collection sites to municipalities or counties with large populations or high participation at the mobile events; added language that provide for grants to counties or municipalities that own and previously operated old closed landfills without composite liners that are determined to be causing harm to the environment through groundwater contamination; allowed for the Fund to be used for proper disposal of hazardous waste from K-12 schools; increased the tipping fee surcharge as noted previously; and allowed for a thorough review of the waste reduction and diversion goal to consider incentives and disincentives to promote recycling and waste reduction. TDEC requested that the Solid Waste Advisory Committee (SWAC) review the State's waste reduction goal and make recommendations for updating the goal and identifying waste reduction practices that the State should implement. In response to this request, the SWAC formed a waste reduction task force to conduct the review and to identify

waste reduction practices that the State should implement. A chronology of the activities of this collaborative group is included in the 'Waste Reduction Task Force' Section of this report, following.

Waste Reduction Task Force

In September 2007, the Solid Waste Advisory Committee, acting on amendments to the Solid Waste Management Act directing a review of the State's waste reduction and diversion goal, established the twenty–three member Waste Reduction Task Force (WRTF) comprised of solid waste professionals from across the state. Members of this task force included representatives of local governments (solid waste directors, county and municipal mayors, aldermen from rural, urban, and large cities,) private industry representatives, and the environmental and energy sectors. The WRTF was supported by a large group of technical assistance providers including TDEC, the University of Tennessee's County Technical Assistance Service (CTAS) and the Center for Industrial Services (CIS), Recycling Marketing Cooperative for Tennessee, and several development districts. Various speakers and organizations were brought in to support and inform the WRTF during their discussion on the many topics reviewed. A professional facilitator was hired to lead the discussions and to ensure that the objectives of the task force were met. Members of the WRTF were organized into four work groups to allow a closer look at the different topics and to make recommendations on those to the entire task force. An eighty (80%) percent consensus of the WRTF was established for moving recommendations forward to the Solid Waste Advisory Committee.

Another bill approved during the 2007 legislative session, directed the Department to enter into a contract with Tennessee State University to perform a study of the characterization of wastes going into Class I landfills and identifying methods of reducing those wastes. This project was to be undertaken with the final report to coincide with decisions from the WRTF. The waste characterization study was finalized on December 15, 2008. In this study, the impacts of potential future bans of various recyclable materials from landfills are calculated. The report also provides a breakdown of Tennessee's disposal from samplings at two landfills and extrapolates that data into a broad picture of disposal trends statewide. This study, with additional data, will aid in the development of better waste management strategies in Tennessee.

The WRTF met for the first time on September 27, 2007, organizing into the four workgroups and establishing that; any recommendations from those groups must receive approval from 80% of the entire task force membership to be considered by the SWAC. The WRTF met nine times, with a total of twenty-two meetings of the individual work groups. A separate work group consisting of the leaders of the regular work groups met in May of 2008 to consolidate their recommendations for presentation to the full task force later that month.

The WRTF concluded its work in late May 2008 where it recommended sweeping waste reduction reforms that would bring the state more in line with its neighbors and to address the continued increasing disposal rates across the state. The recommended reforms included a new waste reduction and recycling goal making everyone responsible for waste reduction, a series of landfill bans, redefining of some current diversion methods as disposal, infrastructure improvements and monetary changes to tipping fees.

On June 16, 2008, SWAC met to hear the task force's recommendations and discuss any proposed amendments. SWAC met again on July 29, 2008 to re-hear the recommendations and refer potential rule changes to the Department. These waste reduction and recycling concepts were approved by the SWAC, with a few modifications, and recommended to the Department. The Department drafted rules incorporating the recommendations. The draft rules were presented to the Solid Waste Disposal Control Board for authorization to proceed with the rule making process. Based on comments from the Solid Waste Disposal Control Board, the draft rules were modified after additional review and consideration of the Solid Waste Advisory Committee. A major change made was removing the requirements for landfill bans.

August 5, 2008, Department staff advised the Solid Waste Disposal Control Board (SWDCB) that the draft rule changes would be presented to go to public hearing at the next SWDCB meeting scheduled for September 30, 2008. At that September 30th meeting, the Department formally presented the draft rule language for SWDCB's consideration for public hearing. The draft rules were withdrawn after SWDCB members indicated that they had not had time to review the language prior to presentation.

The SWDCB authorized the Department to present draft rules at a public hearing on September 1, 2009 with the closing date for comments from the general public being September 30, 2009. Based on these public comments a revised rule package was presented to the SWDCB in February 2010. Since that time, the Department has been in discussions with SWDCB to resolve concerns to assure that rules promulgated were comprehensive and yet not over burdensome to local governments, business and industry charged with implementation.

The revised draft rule language is scheduled to be re-presented to the SWDCB August 3, 2010 for promulgation. Among the greatest benefits to the citizens of Tennessee from this rule package is the positive economic impact of recycling including job creation.

In 2007 Tennessee cities, counties and businesses disposed of 6,818,074 tons of solid waste paying average landfill disposal fees of approximately $218,172,368. During the same period 16% of the total waste stream was recycled from the fiber, plastic, glass, and metals commodity groups equating to 1,319,553 tons of materials. This equals a savings in landfill disposal fees of approximately of $42,225,696. In addition it is estimated that an additional $150,256,731 would have been realized if the recycling rate of these commodities rose to 75% at today's current market rates instead of being disposed.

Tennessee solid waste management collection and disposal companies reported 7,584 existing jobs at an average annual wage of $36,115. Tennessee recycling and manufacturing sectors utilizing paper, metal, plastic and glass commodities reported 77,100 jobs with an average wage of $45,550.

Solid Waste Management System

The SWMS is a multi-pronged approach to better management of Tennessee's solid waste, which includes technical assistance, education, and diversion/resource recovery. These activities are advanced through the collaborative efforts of TDEC, educational institutions, private organizations, and agencies at all levels of government.

To assist the implementation of the SWMS, the Act made each county a Solid Waste Planning District (Solid Waste Management Act, Municipal Solid Waste Planning District, 1991). The Districts, in turn, were allowed to collaborate with local municipalities and neighboring counties to form MSW Regions (Solid Waste Management Act, Municipal Solid Waste Regions, 1991). The Act requires each MSW Region to develop a 10-year disposal plan for their solid waste, provide for solid waste education to its population, and plan to reduce the amount of waste it generates by 25% (Solid Waste Management Act, Municipal Solid Waste Region Plans, 1991).

Along with the 10-year solid waste disposal plans, regions were required to prepare 5-year updates and to submit Annual Progress Reports (APR) that project foreseeable solid waste disposal requirements and proposed solutions. Sixty-eight regional planning boards have the responsibility for developing the plans and for reporting this information to TDEC. The legislature amended the Act in 2004 to allow the APR to be used in lieu of the regional 5-year capacity update. Each region now uses its APR to project changes in solid waste generation and to modify its 10-year plan (Solid Waste Management Act, Municipal Solid Waste Region Plans, 1991).

To implement the SWMS, TDEC disperses monies from the Fund in the form of grants and contracted services. Grants are given to local governments, educational institutions, MSW Regions, and development districts to aid in solid waste planning. Grants are also available to county and local governments to assist in solid waste facility upgrades, purchase of recycling equipment, recycling of waste tires and collection of household hazardous waste at permanent facilities.

References

Solid Waste Management Act of 1991 [SWMA], Basis for Goal. §68-211-861(c). (LexisNexis 2001).
SWMA, Expenditure of revenues. §68-211-835(d). (LexisNexis 2001).
SWMA, Municipal solid waste planning district. §68-211-811(a). (LexisNexis 2001).
SWMA, Municipal solid waste region plans. §68-211-814(a). (LexisNexis 2001).
SWMA, Municipal solid waste regions. §68-211-813(a). (LexisNexis 2001).
SWMA, Plan for disposal capacity & waste reduction. §68-211-813(c). (LexisNexis 2001).
SWMA, Solid waste management fund. §68 211-821(a). (LexisNexis 2001).
SWMA, Solid waste reduction & diversion goal. §68-211-861(a). (LexisNexis 2001).
United States Environmental Protection Agency [US EPA], Office of Solid Waste, Communications, Information, & Resources Management Division. (1998).

Disposal

Tons of Class I Disposal Per Person Per Year By County

The Solid Waste Management Act of 1991 required MSW Regions to reduce the amount of waste placed into Class I landfills by 25% from a base year measurement taken in 1995. Tennesseans disposed of 6,921,007 tons of solid waste in Class I landfills in 1995, equal to 1.32 tons per person per year. In 2009, Tennesseans generated 11,416,805 tons of solid waste with 6,194,629 tons disposed of in Class I landfills and 5,222,176 tons recycled, reused, or diverted to other disposal facilities. This equates to a disposal rate of 0.98 tons per person. Using the 1995 base year, the per capita waste reduction and diversion rate for 2009 is 27%.

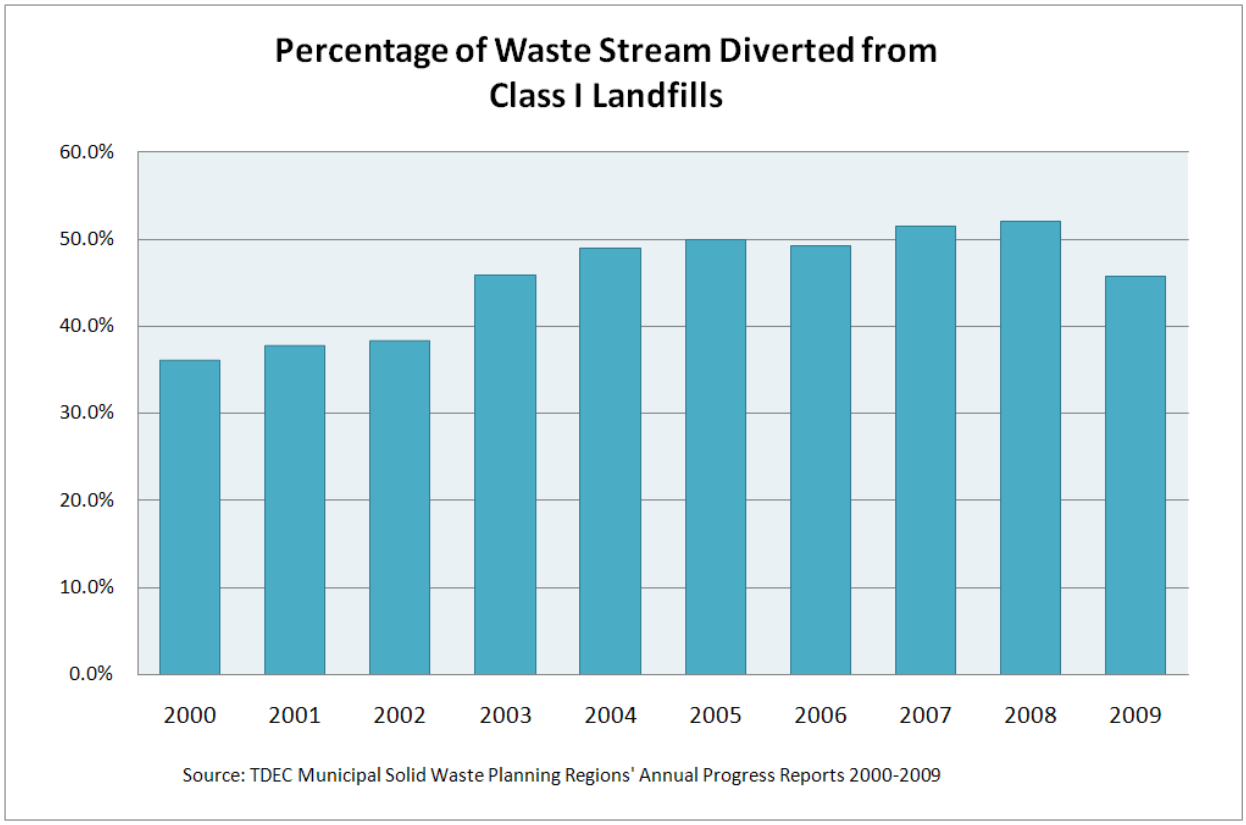
Regions that do not meet the solid waste reduction and diversion goal have their solid waste programs qualitatively assessed to determine if a "good faith" effort was made toward achieving the goal. In late 2006, TDEC adopted rules establishing a method for assessing those regions not meeting the goal. Qualitative assessments have been completed on twelve counties, with three additional assessments pending for CY 2009. Recommendations for program improvements are offered to each of these regions.

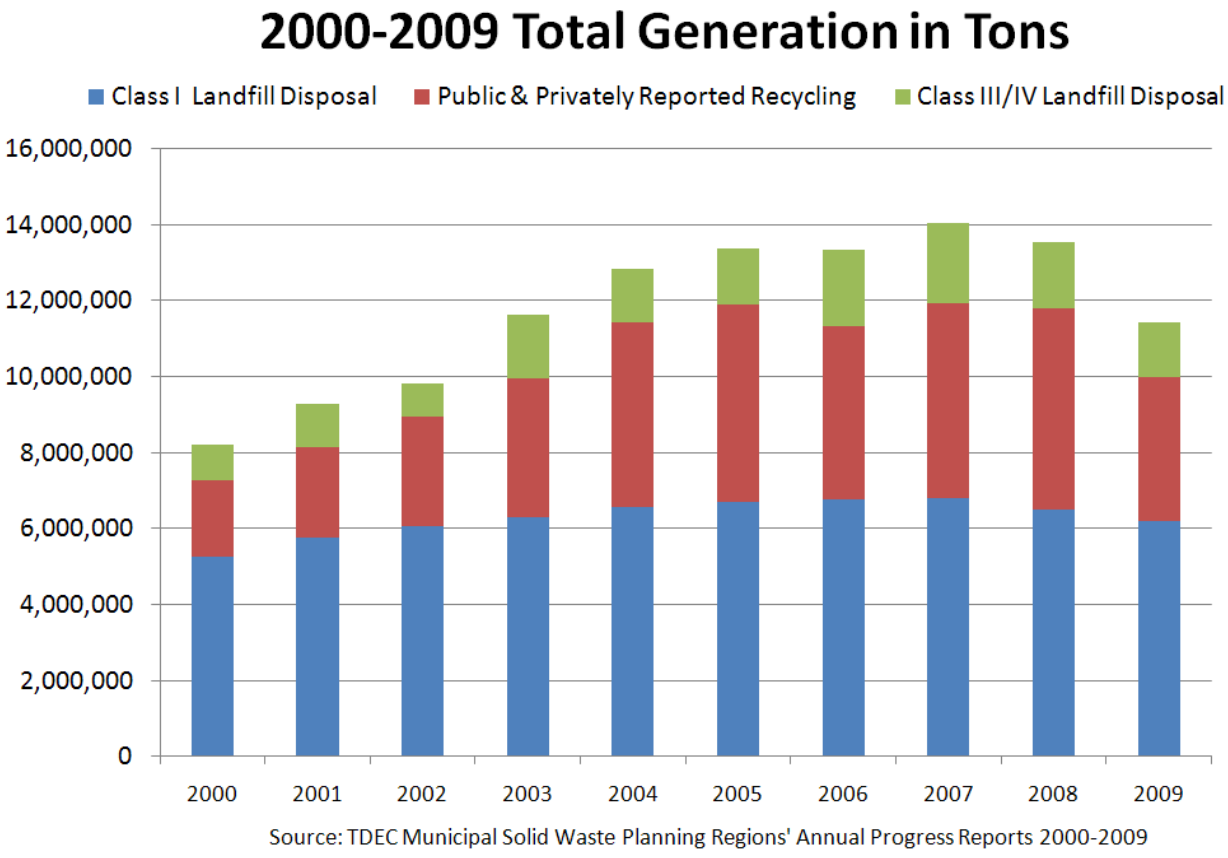
At the end of FY 2009-10, there were 35 operating, permitted Class I (sanitary) landfills in Tennessee; 19 were publicly owned. There were 67 operating, permitted Class III and IV (construction & demolition) landfills. Approximately 1,416,058 tons of material was diverted away from Class I to Class III and IV landfills in CY 2009 according to the Regions' APRs. A total of 514 operating, permitted Convenience Centers are located throughout the state, most of which offer some level of recycling in addition to residential waste collection.

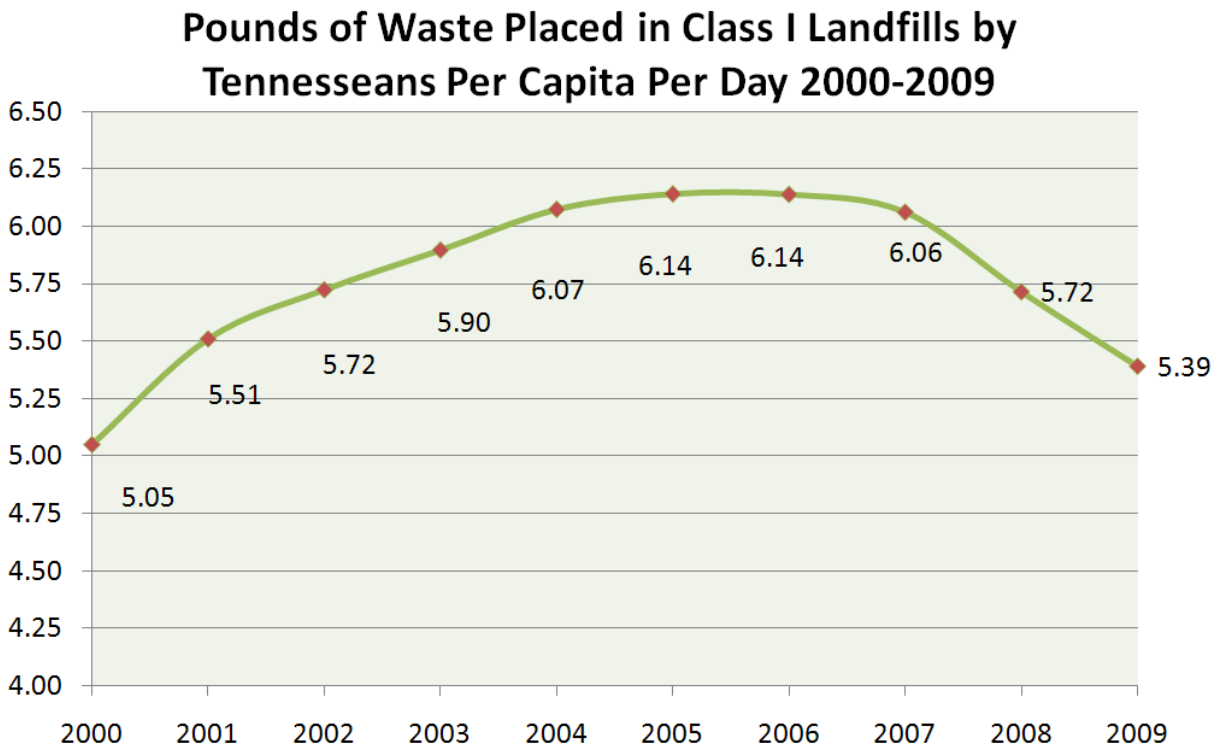
Currently there are approximately 130 known county sponsored unmanned municipal solid waste collection points across Tennessee. These are most commonly referred to as "greenboxes" and usually take the form of one or more open top dumpsters located in underserved remote areas of the counties. About 70% of these locations are located in Haywood County. Greenboxes are also known to be located in Anderson, Clay, Campbell, DeKalb, Lake and Perry Counties. By law, only receptacle locations that were established prior to Janurary 1st, 1996, are allowed to continue to operate.

Greenboxes are of environmental concern as there is often no monitoring of the substances that go into these containers before the material is transported to landfills. The presence of these unmanned and unmonitored containers makes promotion of recycling and waste reduction impossible. It is the opinion of the Department that the practice of utilizing greenboxes as a method of waste collection be phased out in the coming years.

The following charts and tables summarize Tennessee's waste stream from 2000-2009.


Percentage of Waste Stream Diverted from Class I Landfills
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Source: TDEC Municipal Solid Waste Planning Regions' Annual Progress Reports 2000-2009


2000-2009 Total Generation in Tons
Class I Landfill Disposal
Public & Privately Reported Recycling
Class III/IV Landfill Disposal
16,000,000
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
Source: TDEC Municipal Solid Waste Planning Regions' Annual Progress Reports 2000-2009



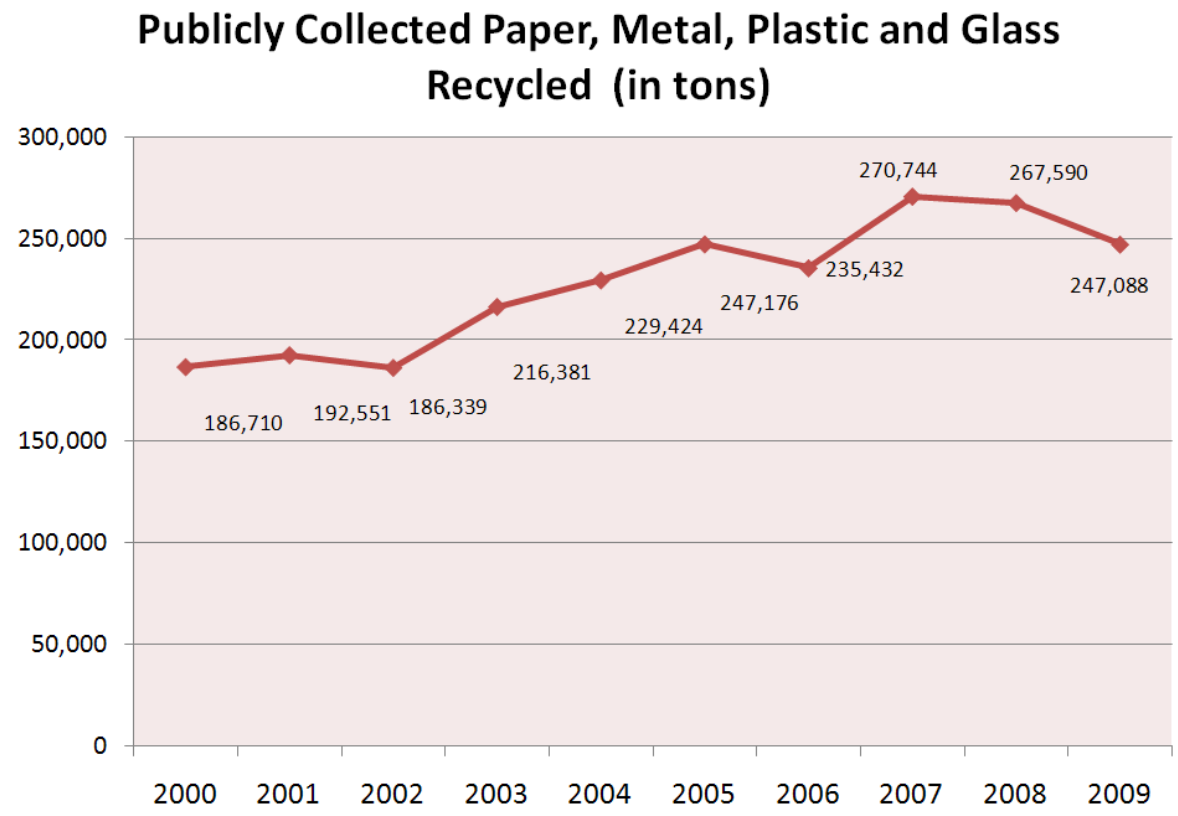
Source: TDEC Municipal Solid Waste Planning Regions' Annual Progress Reports 2000-2009

Waste Diversion

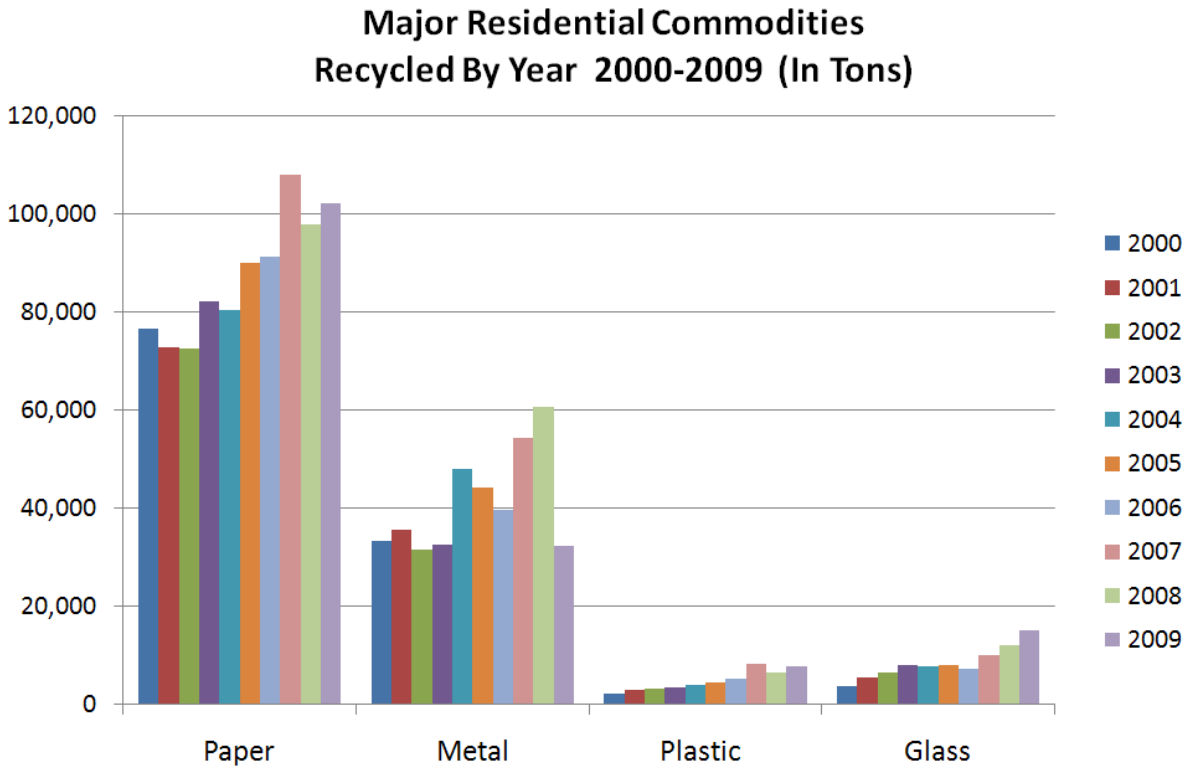
The Solid Waste Management Act of 1991 established a goal for diverting waste from Class I landfills. There are many ways in which materials might be diverted and beneficially used; however, publicly hosted recycling programs of post-consumer goods are most often utilized for benchmarking of programs and for national comparisons.

A region's waste diversion/reduction efforts are recorded on County Recycling Reports (CRR), aggregated, and reported to the Department by way of the APR. These CRRs are categorized as either public or private. For the sake of benchmarking, the following charts outline the post-consumer recycling efforts across the state for paper, metal, glass, and plastic.

Paper, metal, glass, and plastic recycling is offered to residents and businesses throughout the state through various public collection programs operated or contracted through municipal or county governments.



Source: TDEC Municipal Solid Waste Planning Regions' Annual Progress Reports 2000-2009



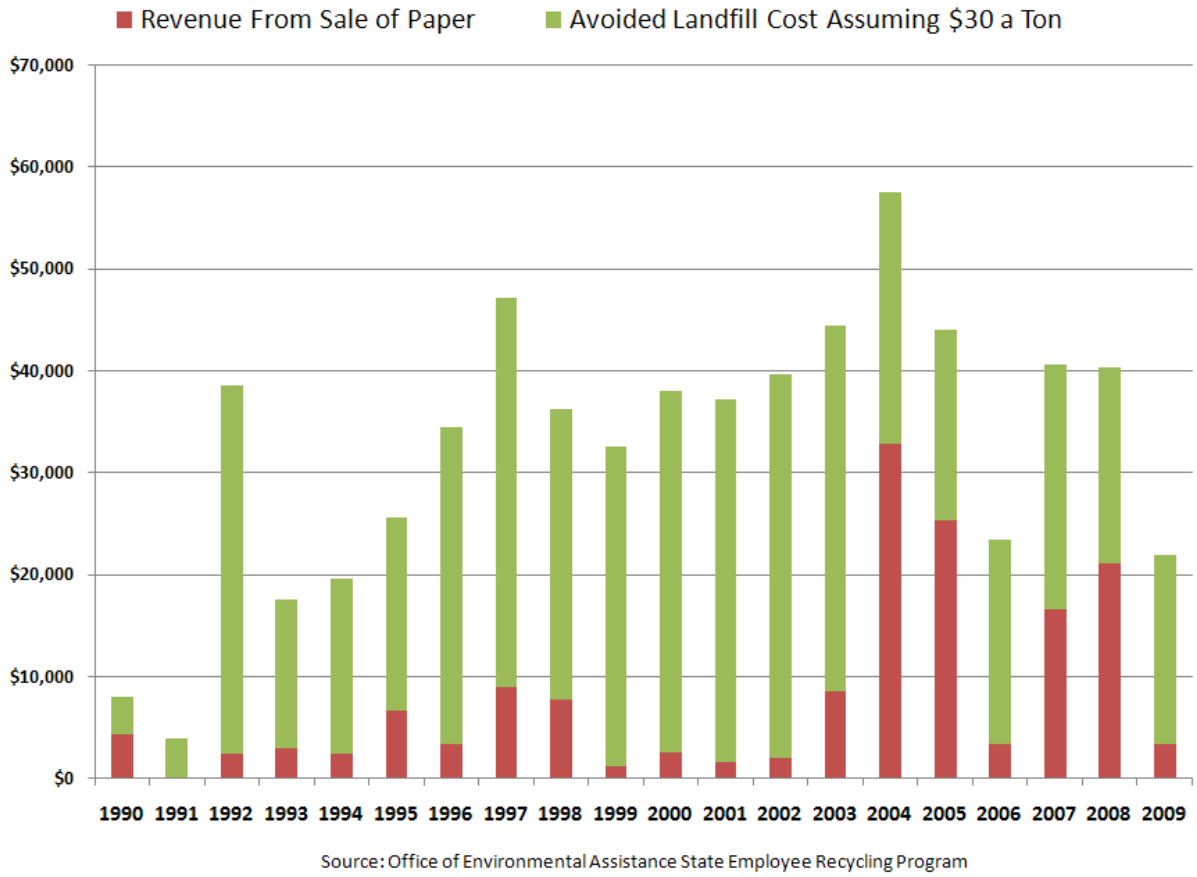
Source: TDEC Municipal Solid Waste Planning Regions' Annual Progress Reports 2000-2009

Office of Environmental Assistance Programs

The State Employees Recycling Program

The State Employees Recycling Program (SERP) administered by the Office of Environmental Assistance (OEA), includes more than 24,500 state employees in 114 facilities.

From January 1, 1990 to December 31, 2009, state employees recycled 16,506 tons of mixed office paper. This produced revenue of $157,064.35 for the state, while avoiding $493,400.00 in landfill disposal costs. These revenues are deposited in the Solid Waste Management Fund to purchase new equipment for the program.



Partnering with the Departments of Transportation and Tourist Development as well as community partners, the SERP instituted a recycling program for cans and bottles by visitors at the Hartford and Jellico Welcome Centers. Recycling continues at the Bristol Welcome Center and is picked up by Sullivan County.

State Parks Recycling Program

The Tennessee State Park system has viable recycling programs in place, offering recycling opportunities to both staff and visitors. Recycling at the parks is accomplished through partnerships between the parks, SERP, and the local solid waste agencies. The SERP's key role was to provide technical and financial resources while the local programs provide options for recycling the materials. Two resort parks are serviced by the SERP vendor with revenue returned to the Fund.

Tennessee Solid Waste Education Project

Tennessee Solid Waste Education Project (TNSWEP) is an educational project supported by the Fund and designed to help Tennessee students, teachers and local officials understand issues about solid waste management, source reduction, recycling, natural resource conservation, and environmental protection.

Since 1995, TNSWEP has provided consulting services, education materials, and training for K-12 teachers and students statewide. The staff coordinates TNSWEP services with TDEC's Green Schools program, and discusses opportunities and needs for incorporating activities relating to the solid waste component of the Tennessee Pollution Prevention Partnership.

In FY 2009-10, TNSWEP staff made 16 classroom presentations and conducted 5 in-service trainings and curriculum workshop sessions for teachers and other solid waste educators. The TNSWEP website had more than 5,000 visitors.

A survey was sent to educators through various channels regarding the TNSWEP program. Of note, the respondents were generally unaware of the TNSWEP program; however, 62 percent of respondents felt that solid waste education is important.

School Chemical Cleanout Campaign

The Office of Environmental Assistance's (OEA) School Chemical Cleanout Campaign (SC3) is a cooperative effort between the Tennessee Department of Environment and Conservation (TDEC) and Department of Education. It has received support from the Tennessee Organization of School Superintendents, Tennessee Science Teachers Association, and Tennessee Academy of Science. Major grant funding came from the US Environmental Protection Agency Programs of Pollution Prevention and Solid Waste Management.

The primary goals are:

- To inventory and remove potentially dangerous legacy chemicals from schools.

- To conduct follow-up educational workshops for teachers on safe chemical management, lab safety regulations, and chemical waste disposal.

- To avoid future needs for a disposal program by encouraging Green Chemistry that uses less hazardous materials and Microchemistry in Tennessee K-12 schools.

The program has produced very successful results. By coordinating school cleanouts with TDEC's mobile Household Hazardous Waste (HHW) event collections, disposal costs have been minimized. Schools submit an inventory or photos of unwanted chemicals, and then OEA and the HHW contractor segregate, pack and ship for proper disposal. The majority of the waste is incinerated in a hazardous waste incinerator. All mercury is recycled into new uses.

During FY 2009-10, 19 schools, which entailed 18,709 students and teachers, removed 6,652 pounds of legacy chemicals including 197 pounds of mercury and an estimated 1,996 pounds of formaldehyde.

Since its inception, the SC3 program has removed chemicals from 187 schools improving the health and safety of 160,414 students and 11,127 teachers. The Tennessee SC3 program has removed a total of 57,471 pounds of waste, including 1,282 pounds of mercury and an estimated 17,235 pounds of formaldehyde.

Technical Assistance

Development Districts

The Development Districts were established to assist local governments with planning and development services while also serving as a forum for local governments to solve common problems associated with economic development, environmental planning and community growth. The Districts assist local governments plan for the future by coordinating the establishment of regional and local priorities. In 1966, the Tennessee General Assembly passed legislation establishing the Development district network across Tennessee. There are 9 Development Districts serving all of Tennessee's 95 counties.

Since the Tennessee Solid Waste Act of 1991 was passed by the Tennessee General Assembly, Development Districts have been providing technical assistance to local governments across Tennessee through an annual grant from the Department of Environment and Conservation. T.C.A 68-211-822/823 directs Development Districts to maintain district needs assessments, assist counties and regions within each District to develop, maintain and revise regional solid waste management plans and provide assistance to counties within each District.

In FY 2009-10, Development Districts assisted local governments with solid waste management issues covering a wide-range of issues. During the past year, Development Districts have been focused on two core functions required by the Solid Waste Management Act. These activities include assisting Solid Waste Planning Regions and local governments with the preparation, development and submittal of the Municipal Solid Waste Planning Regions' Annual Progress Reports (APR). These Reports are due in March of each year as mandated by the Tennessee Solid Waste Management Act. During the past year, Districts assisted solid waste planning

regions with preparing and reviewing 49 APR's. In addition to preparing and submitting APR's, Development Districts also provided assistance to many of the State's Regional Solid Waste Planning Boards. The second core function of Development Districts is to maintain regional solid waste plans and research and complete District Solid Waste Needs Assessments updates as required every 5 years by the Tennessee Solid Waste Management Act. Development District's completed 23 District Needs Assessments during the past year.

Other activities the Districts have been involved with in solid waste management include:

- Continued to assist Regional Solid Waste Planning Boards, representing 32 counties, with on-going activities.
- Provided technical assistance to local governments on solid waste education, reduction, and recycling initiatives.
- Participated in activities of several partner organizations including Keep America Beautiful affiliates, Tennessee Recycling Coalition, Tennessee Solid Waste Directors Association and Recycling Marketing Cooperative for Tennessee.
- Conducted recycling surveys of public and private recyclers throughout the State.
- Assisted local governments with the preparation and administration of 28 Recycling Equipment Grants.

Recycling Marketing Cooperative for Tennessee

The Recycling Marketing Cooperative of Tennessee (RMCT) is a nonprofit organization formed in 1993 in response to the 1991 Solid Waste Management Act to market Tennessee's recyclables. As the only statewide cooperative in Tennessee, RMCT's contract with TDEC benefits the Department by fulfilling the responsibilities of the Office of Cooperative Marketing under Section 68-211-826 of the 1991 Solid Waste Management Act.

RMCT brokers recycling commodities through a bid process. The competitive bidding insures that local governments receive the highest dollar amount for their materials. The organization provides technical assistance, contract advice, recycling program development, and trains solid waste managers to take ownership of their programs. RMCT maintains a database of regional buyers, public, private, and non-profit recycling programs. The organization records quantities and locations of materials in the database. RMCT educates clients on materials specifications to boost the quality of recyclables and distributes monthly market pricing to local governments. This insures local governments are receiving fair prices for materials. In effect, RMCT maintains fair pricing for all recycling programs in Tennessee by sharing current market information and providing the most competitive prices for their clients.

During FY 2009-10, RMCT marketed 6,478 tons of recyclable materials and collected over $603,200 for local programs. Based on an average landfill fee of $32 per ton, RMCT's marketing diverted recyclables from landfills and saved local solid waste programs over $158,572. During FY 2009-10, RMCT also provided technical assistance and marketing to 45 counties, 12 cities, and 6 businesses across Tennessee.

RMCT's technical assistance and marketing teaches clients how to self market materials. Some local governments begin their own marketing through a method similar to RMCT. This is an accomplishment as programs move into self-sustainability, but working with RMCT still brings several advantages. RMCT's marketing system brings the highest revenues for local governments. By providing technical assistance to clients, vendors know they are receiving quality material and their bids reflect that confidence. RMCT's vendors are verified and their performance history is tracked. Delinquent vendors are suspended to maintain quality service for local governments.

In FY 2006-07 RMCT's goal was to provide free electronic scrap (E-scrap) recycling. In 2009, many counties are now receiving up to $0.15 per pound for the recycled E-scrap. Because of RMCT's efforts, local governments work directly with electronics recycling vendors and continue to lessen the impact of electronics on TDEC's mobile household hazardous waste collection events. From January to June 2010, one of RMCT's vendors working directly with counties processed 544 tons of material. This provided $408,000 in cost avoidance for state sponsored collection programs. RMCT continues to meet challenges with sensible solutions and looks forward to increasing recycling efforts in Tennessee.

University of Tennessee-Center for Industrial Services

TDEC contracts with the University of Tennessee Center for Industrial Services (CIS) to provide Tennessee industries with technical assistance on waste identification and reduction. CIS also provides training, workshops, and assistance related to waste minimization, waste management planning, and reduction. The Tennessee Materials Exchange (TME) and the Recycling Markets Directory (RMD) are two websites maintained by CIS to assist Tennessee industries and businesses reduce solid waste.

TME is a free service assisting industry to find markets for excess materials, by-products, and waste products that may be utilized by other industries as inputs to their industrial process. It promotes beneficial use of material resources, especially those considered wastes and that would otherwise be destined for disposal. TME lists materials available and materials needed and creates the initial contact between two parties with similar interests. The TME listings are updated monthly on their website.

The RMD is an Internet based database of companies that actively recycle materials generated in Tennessee (companies with expansion plans are not listed until in-state facilities are operational). The website is searchable by company name, by company location, or by types of material handled. The database is constantly evolving and is regularly updated.

During FY 2009-10, CIS evaluated pyrolytic and non-pyrolytic technologies for converting municipal solid waste to energy and reported the results to TDEC. The technologies evaluated included bio-oil and gasification facilities in the US and Canada, ethanol-from-waste technologies, "Q Microbe" processes, and microbes that metabolize CO or CO^2 into ethanol, and bio-oil-producing algae. CIS staff visited two gasification facilities, one in Florida and another in Georgia and reported the findings.

The University of Tennessee-County Technical Assistance Service

TDEC contracts with the University of Tennessee, County Technical Assistance Service (CTAS) to provide technical assistance to local governments by providing technical documents and consultative services. In addition to assisting and advising these authorities on up-grading and maintaining their solid waste collection systems, including convenience centers, transfer stations, and systems used in waste reduction, recycling, and disposal, CTAS also develops and offers courses, workshops, and continuing education on solid waste management best practices, source reduction, and recycling.

During FY 2009-10, CTAS had over 600 requests from counties, municipalities, solid waste authorities and regions. Significant projects for this year included development and administration of a state-wide Solid Waste Professionals Certification Program (SWPCP). A new Solid Waste certification program was started in 2009. The program currently has 33 enrolled students from over 25 local governments, and is on target to graduate almost half of these students in September of 2010. The course is a combination of nationally recognized Solid Waste Association of North America (SWANA) certification courses and courses taught by CTAS and University staff. The program is geared toward solid waste directors and public works directors, but will benefit recycling coordinators and other front line solid waste management staff.

In this fiscal year, CTAS also assisted Sevier County Solid Waste Authority in re-authorizing and implementing resolutions and ordinances addressing waste flow control to the Solid Waste Authority's Compost facility; provided consultation on budgeting and operational efficiency to a number of counties facing critical cutbacks in operational budgets; and helped a number of counties in restructuring their tire programs to obtain the maximum tire recycling refunds. CTAS also continues to host an environmental blog, covering solid waste, public works, energy, and broader environmental topics relevant to Tennessee local governments.

The CTAS consultants provide valuable technical assistance in the design and operation of the local solid waste system by offering collaborative opportunities for solid waste officials, providing in house research and on-site consultation, procedural handbooks, personnel handbooks, specifications for equipment and service contracts, and resolutions and ordinances that assist local governments in properly incorporating solid waste activities into their local laws and community operations.

Problem Waste Management

Household Hazardous Waste

The Household Hazardous Waste (HHW) Program provides mobile collection service to counties for solid wastes in the home that exhibit the characteristics of being ignitable, corrosive, reactive, or toxic. The potential for ground and surface water contamination, damage to solid waste and wastewater treatment operations, and injury to sanitation workers exists if these materials remain in the municipal waste stream. Ninety-four counties have participated in the

HHW mobile collection service since the program's inception in 1993. SWM continues to provide up to four events each Saturday from mid-March through mid-November. Clean Harbors Environmental Services, Inc. was the State's contractor for the mobile collection service until July 31, 2010.

In recent years, the State has encouraged local governments to provide the year-round collection of batteries, oil, paint, antifreeze, and electronics (BOPAE). Preference for HHW collection service is given to counties that make efforts to reduce BOPAE collected at the HHW events, thereby allowing limited funding resources to be available for the collection of the more hazardous household materials (i.e. flammable liquids, caustics, oxidizers, mercury).

In FY 2009-10, Tennessee residents had more opportunities to safely dispose of HHW than ever before through cooperative efforts by local governments and the state's mobile HHW collections. Overall, the State experienced a reduction in participation at the mobile events due to an increase in local BOPAE collection events and also year-round collection of BOPAE by many counties. The State measure of success for an HHW event is the percentage of hazardous materials of the total weight collected at a mobile event. The highest percent hazardous materials collected at a mobile event was 100 percent and was achieved by two counties; Williamson and Sullivan. This was a result of both counties diverting all BOPAE. The statewide average increased to 21 percent in FY 2009-10. The State sponsored 35 HHW events and 5 milk run pickups for pre-collected oil-based paint. The service was utilized by 11,784 households and disposed of 832,729 pounds of household hazardous waste. The total cost for the 35 rural county sweeps and five milk run pickups was $599,833.24. Appendix A presents data for the FY 2009-10 HHW mobile collection service.

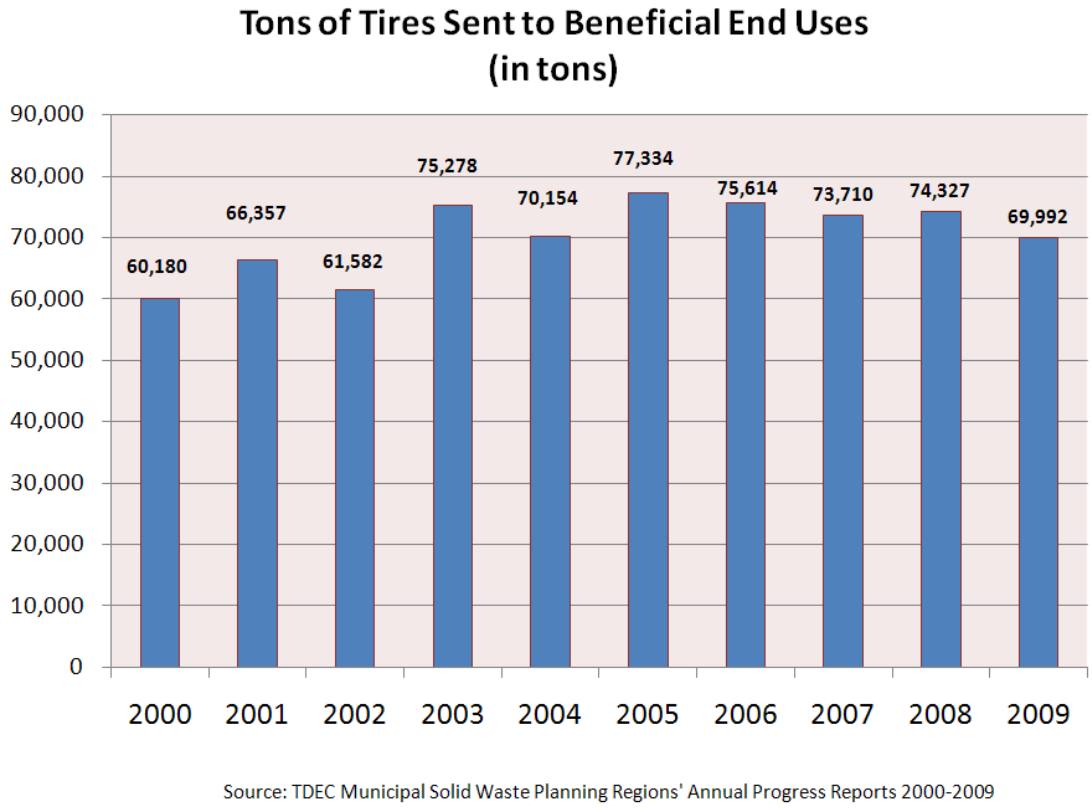
Chattanooga, Knoxville, Nashville, and Shelby County have permanent HHW collection facilities and are not included in these calculations. These facilities were constructed with grants from the Solid Waste Management Fund, as provided in the SWMA [TCA §68-21-828].

Waste Tire Recycling

The Act was amended in 1999 to prohibit counties from placing shredded tires in landfills after July 1, 2002, if the net cost of shredding, transporting, and disposing of waste tires exceeded the cost of an available beneficial end use. Beneficial end uses for scrap tires include cement manufacturing, tire-derived fuel (TDF), and civil engineering applications. The last year that statewide tire shredding service was provided was FY 2001-02. All 95 Tennessee counties now send their tires to beneficial end users and grants are available to assist the counties in this effort. In FY 2009-10, 69,992 tons of tire were recycled in Tennessee with the recycling of 54,870 of those tons aided with state grant dollars.

TDEC maintains a list of unpermitted waste tire disposal sites, which is prioritized to identify those sites that may pose a threat to human health. For instance, rainwater trapped in tires can become a breeding area for mosquitoes. The potential presence of West Nile virus within proximity of the public is of great concern at the unpermitted waste tire sites. The new Waste Tire Cleanup Grant was developed to assist counties with clean up and remediation of unpermitted waste tire disposal sites. Counties are solicited to utilize these grant funds to clean

up legacy or historical unpermitted waste tire sites and are authorized by these grants to contract with third parties to clean up the tire site and receive reimbursement for one hundred percent of eligible costs. This grant was used to clean up a large site in Hickman County totaling 193.37 tons of tires in FY 2009-10.



Source: TDEC Municipal Solid Waste Planning Regions' Annual Progress Reports 2000-2009

Assistance Grants

Financial assistance has been provided for solid waste initiatives to Tennessee's local governments and non-profits since 1992. During this period, some 3,350 grants totaling over $100 million dollars have been awarded for various projects ranging from key pieces of recycling equipment purchases to large facility improvements like the building of material recovery facilities (MRFs), installation of truck scales, and construction of convenience centers. The Fund provides the monies for these grants.

Solid waste grants have assisted Tennessee's 68 municipal solid waste planning regions in building much needed infrastructure. A decade ago, green boxes (unmanned county waste receptacles) dotted our back roads with anything and everything being tossed in and around these containers. Today, 93 of our 95 counties have a minimum of one convenience center, which is monitored and fenced. These centers provide drop off points for MSW, as well as assorted recyclables. The vast majority of Tennesseans can now enjoy having an integrated solid waste system to manage their local MSW as a result of these solid waste grants.

The grant program also provides grants to the State's development districts, the University of Tennessee County Technical Assistance Service (UT-CTAS), University of Tennessee Center for Industrial Services (UT-CIS), and the Recycling Marketing Cooperative for Tennessee (RMCT) to provide technical assistance to the local governments.

Recycling Equipment Grant

An excellent way for local governments and non-profit organizations to purchase key pieces of recycling equipment is the recycling equipment grant. Traditionally, items purchased under this grant include: roll off containers, skid loaders, paper shredders, scales, balers, glass crushers, and assorted styles of collection containers. This is a competitive grant with a maximum award of $25,000. A matching share of 10%-50% is required and is determined using an economic index. In FY 2009-10 four counties and one city received recycling grants totaling $86,329 as outline in Appendix B. Counties and municipalities eligible for the recycling rebate are not eligible for this grant offering.

Recycling Rebates

Each year the top eleven county generators of MSW are offered recycling rebates which may be used for any recycling purpose including establishing, maintaining or expanding recycling operations and systems or providing education for local recycling programs. Municipalities are offered a portion of the rebate for their programs. The municipalities may allow their portion to be deferred to the county. There is a one to one matching of funds for this rebate. These awards totaling $300,000 are detailed in Appendix C.

Waste Tire Recycling Grants

Grants to counties to assist with the collection and recycling of their waste tires are provided by the SWM and these awards are detailed in Appendix D.

TDEC initiated the Waste Tire Recycling Grant Program in June of 1995 to assist counties in locating, collecting, and properly disposing waste tires with beneficial end use being the ultimate goal. Grants are awarded based on total annual payments to the Department of Revenue by the county's tire dealers. Each county's reimbursement is paid on its eligible tire generation at a rate of $70.00 per ton.

In FY 2009-10, TDEC gave 88 counties grants for the location, collection, and approved beneficial end-use of tires. TDEC reimbursed counties $3,793,602 through the Waste Tire Grant Program. The participating grantees collected 54,870 tons or 5,487,000 passenger tire equivalents and processed them to beneficial end use.

Waste Tire Cleanup

The Unpermitted Waste Tire Site cleanup grant is designed to assist local governments to clean up unpermitted waste tire sites resulting from historical dumping of tires. Eligibility for this grant is determined on a priority basis. This grant does not require a matching share from the county. Grants are awarded to counties to contract for services to mitigate unpermitted waste tire sites, and provide for equipment rentals, labor needs, access to site and other activities related to the mitigation.

The number of grants annually is limited by the availability of funds after prioritization. In FY 2009-10, Hickman County contracted to clean up a unpermitted waste tire site. They worked with the state to provide some in-kind services reducing costs from an estimate of $115,000 to approximately $40,000. Crocket, Lauderdale and Overton counties all had cleanups with the state providing only the $70 dollars per ton reimbursement as would normally be paid for tires in the waste tire program with the county absorbing all other cleanup costs.

Operation and Maintenance Grants for Permanent HHW Collection Facility

Chattanooga, Knoxville, Nashville, and Shelby County each have one permanent household hazardous waste collection site. These facilities accept household hazardous wastes, such as cleaning chemicals and pesticides, for safe disposal. TDEC provided initial grants for construction and start-up of these facilities at these sites during previous years. A yearly maintenance grant is paid to the counties to cover a portion of their ongoing operational costs. These four facilities received a total of $338,343 during FY 2009-10.

Development Districts

The Department contracts with development districts each year to provide technical assistance for solid waste planning. The districts prepare and submit work plans that outline technical assistance for the regions in their district. In FY 2009-10, eight development districts received $261,701 to provide quality technical assistance services. This is a non-matching grant.

University of Tennessee County Technical Assistance Service (UT-CTAS)

Under the University of Tennessee's Institute for Public Service, the County Technical Assistance Service received a non-competitive grant for $$221,085 to provide technical assistance to local governments. Activities funded by this grant directly provide for assistance to local governments in designing facility layout, determining appropriate equipment specifications, best management practices development, GIS mapping and route design to name a few. Additional value added services from UT-CTAS also includes legal assistance in solid waste matters, research assistance on solid waste topics and technical support at public meetings. This grant currently supports a technical blog for solid waste professionals in local governments in Tennessee and offers a valuable resource for other professionals across the country.

University of Tennessee Center for Industrial Service (UT-CIS)

The University of Tennessee's Institute for Public Service, the Center for Industrial Service grant is a yearly non-competitive grant. In FY 2009-10, UT-CIS received a grant for $165,000 for technical assistance to the business and industry sector. This grant provides funding for the operation of the Tennessee Materials Exchange. The Tennessee Materials Exchange promotes the beneficial use of material resources, especially those considered to be wastes destined for disposal. Tennessee businesses can use this service to find markets for industrial by-products, surplus materials and wastes. Material that one company classifies as waste may be raw material to another. The Tennessee Materials Exchange lists potentially useful materials, available and wanted, and serves as a matchmaker between those who have materials and those who want them.

UT-CIS also hosts the online Recycling Markets Directory. The Recycling Markets Directory is a database that contains information about companies that purchase recyclable materials. UT-CIS also provides technical assistance services and projects to benefit business and industry and make them more competitive by reducing waste generation.

Appendix A: Mobile Household Hazardous Collection Summaries Fiscal Year 2009-10

County	Date	Participation	Participation Rate	Cost	Total Weight (lbs)	% BOPAE by Weight	% Haz Mat by Weight
Anderson	10/10/2009	323	1.1%	$16,387	17,737	78%	22%
Bedford	4/24/2010	128	0.8%	$10,807	13,633	73%	19%
Blount	11/14/2009	1,055	2.3%	$55,282	92,956	87%	13%
Bradley	4/17/2010	791	2.1%	$43,591	67,822	91%	9%
Cannon	4/24/2010	104	1.9%	$4,966	8,299	90%	10%
Cheatham	10/17/2009	66	0.4%	$7,780	7,304	86%	14%
Claiborne	10/3/2009	11	0.1%	$1,941	671	77%	23%
Coffee	5/22/2010	166	0.8%	$9,690	9,168	62%	29%
Cumberland	10/10/2009	957	4.7%	$26,671	45,678	90%	10%
Dyer	10/17/2009	200	1.3%	$5,890	7,029	76%	24%
Fentress	4/17/2010	63	0.9%	$7,767	13,125	95%	5%
Greene	4/10/2010	396	1.5%	$23,381	35,366	190%	14%
Henry	5/22/2010	222	1.8%	$8,757	10,903	82%	18%
Jefferson	10/10/2009	88	0.5%	$4,791	3,876	64%	36%
Lawrence	10/17/2009	195	1.2%	$9,173	16,591	82%	18%
Lincoln - Milk Run	4/22/2010	na	0.0%	$1,599	3,441	91%	9%
Loudon	4/10/2010	356	2.1%	$20,319	25,253	75%	22%
Macon	5/1/2010	22	0.3%	$2,455	1,751	60%	15%
Madison	10/24/2009	584	1.5%	$31,746	57,241	88%	12%
Marion	3/27/2010	15	0.1%	$2,240	1,497	71%	21%
Marshall	5/1/2010	104	0.9%	$7,443	5,971	67%	23%
Maury	10/17/2009	319	1.0%	$21,913	32,906	87%	13%
McMinn	10/3/2009	214	1.0%	$14,111	12,797	85%	15%
Montgomery	3/20/2010	948	1.6%	$23,577	31,217	63%	31%
Obion	5/15/2010	108	0.8%	$4,836	5,041	68%	27%
Overton	5/15/2010	43	0.5%	$2,656	2,040	75%	25%
Putnam	10/24/2009	495	1.9%	$21,653	25,959	83%	17%
Robertson	5/8/2010	86	0.4%	$9,031	11,700	80%	11%
Robertson - Milk Run	10/9/2009	na		$2,421	6,801	100%	0%
Robertson - Milk Run	6/8/2010	na		$2,687	6,981	100%	0%
Rutherford	11/7/2009	1,095	1.3%	$57,820	94,276	87%	13%
Sevier	4/24/2010	330	1.0%	$14,366	23,879	85%	12%
Smith - Milk Run	6/14/2010	na	0.0%	$1,380	3,498	100%	0%
Stewart	6/5/2010	67	1.3%	$3,618	4,456	67%	33%
Sullivan	4/10/2010	224	0.4%	$7,408	3,812	29%	71%
Sumner	10/24/2009	464	0.8%	$36,286	48,370	85%	15%
Warren	10/10/2009	373	2.4%	$16,589	20,473	88%	12%
Washington	4/17/2010	675	1.5%	$23,759	34,330	77%	19%
Williamson	5/8/2010	497	0.8%	$32,807	18,881	0%	100%
Williamson - Milk Run	11/20/2009	na		$238	0	100%	0%
Total/Average		**11,784**	**1.23%**	**$599,833.24**	**832,729**	**92%**	**22%**

BOPAE (batteries, oil, paint, antifreeze, electronics)
Haz Mat (flammables, reactives, corrosives, toxics, etc.)

Appendix B: Recycling Equipment Grant Expenditures Fiscal Year 2009-10

Bledsoe	$	10,800.00
Claiborne	$	25,000.00
Henry	$	24,483.00
Obion	$	10,800.00
City of Tullahoma	$	15,246.00
TOTAL:	$	86,329.00

Appendix C: Rebate Awards Fiscal Year 2009-10

Davidson County/Nashville	$47,211.00
Belle Meade	$267.00
Berry Hill	$0.00
Forest Hill	$0.00
Goodlettsville	$876.00
Lakewood	$0.00
Oak Hill	$0.00
Ridgetop	$0.00
Hamilton	$8,019.00
Chattanooga	$11,845.00
Collegedale	$551.00
Eastridge	$1,362.00
Lakesite	$0.00
Lookout Mountain	$0.00
Red Bank	$802.00
Ridgeside	$0.00
Signal Mountain	$493.00
Soddy-Daisy	$0.00
Walden	$0.00
Knox	$23,108.00
Farragut	$0.00
Knoxville	$17,415.00
Loudon	$8,383.00
Philelphia	$0.00
Lenoir City	$1,747.00
Greenback	$0.00
Loudon	$0.00
Farragut	$0.00
Madison	$4,617.00
Jackson	$8,778.00
Medon	$0.00
Threeway	$0.00
Montgomery	$8,591.00
Clarksville	$0.00

Rutherford	$16,732.00
Eagleville	$0.00
Lavergne	$0.00
Murfreesboro	$0.00
Smyrna	$0.00
Shelby	$11,451.00
Arlington	$0.00
Barlett	$5,175.00
Collierville	$4,272.00
Germantown	$4,058.00
Lakeland	$882.00
Memphis	$72,952.00
Millington	$0.00
Sullivan	$6,941.00
Bluff City	$0.00
Bristol	$2,066.00
Johnson City	$0.00
Kingsport	$3,310.00
Sumner	$9,992.00
Gallatin	$2,435.00
Goodlettsville	$475.00
Henderson	$0.00
Millersville	$0.00
Mitchellville	$0.00
Portland	$0.00
Westmoreland	$0.00
Whitehouse	$0.00
Williamson	$10,011.00
Brentwood	$0.00
Fairview	$0.00
Franklin	$5,183.00
Nolensville	$0.00
Spring Hill	$0.00
Thompson Station	$0.00
Totals	$300,000.00

Appendix D: Waste Tire Recycling Grant Awards Fiscal Year 2009-10

Anderson	$54,000.00	Lauderdale	$12,000.00
Bedford	$28,400.00	Lawrence	$40,200.00
Benton	$12,000.00	Lewis	$8,000.00
Bledsoe	$2,300.00	Lincoln	$25,100.00
Blount	$85,000.00	Loudon	$29,000.00
Bradley	$65,000.00	Macon	$20,500.00
Campbell	$20,100.00	Madison	$147,000.00
Cannon	$2,900.00	Marion	$24,000.00
Carroll	$20,500.00	Marshall	$19,600.00
Carter	see Hub	Maury	$57,500.00
Cheatham	$13,600.00	Mcminn	$33,200.00
Chester	$5,800.00	Mcnairy	$9,500.00
Claiborne	$12,100.00	Meigs	$850.00
Clay	$850.00	Metro Lynchburg / Moore	$1,400.00
Cocke	$23,900.00	Monroe	$31,200.00
Coffee	$41,500.00	Montgomery Hub / Stewart	$114,000.00
Crockett	$6,500.00	Morgan	$4,400.00
Cumberland	$46,300.00	Obion	$28,500.00
Davidson / Metro Nashville	$595,000.00	Overton	$15,900.00
Decatur	$5,200.00	Perry	$2,600.00
Dekalb	$10,500.00	Pickett	$1,400.00
Dickson	$50,500.00	Polk	$8,700.00
Dyer	$30,100.00	Putnam	$72,500.00
Fayette	$14,600.00	Rhea	$15,400.00
Fentress	$15,300.00	Roane	$37,800.00
Franklin	$22,600.00	Robertson	$39,200.00
Gibson	$44,000.00	Rutherford	$183,000.00
Giles	$14,600.00	Scott	$5,400.00
Grainger	$6,300.00	Sequatchie	$10,200.00
Green	$51,356.00	Sevier (Solid Waste, Inc.)	$63,300.00
Grundy	$1,900.00	Shelby	$506,500.00
Hamblen	$58,400.00	Smith	$9,300.00
Hamilton	$316,000.00	Stewart	see Hub
Hancock	$2,100.00	Sullivan	see Hub
Hardeman	$12,200.00	Sumner (Resource Authority)	$73,000.00
Hardin	$17,595.00	Tipton	$30,000.00
Hawkins	$19,900.00	Trousdale	$6,100.00
Haywood	$13,900.00	Unicoi	see Hub
Henderson	$21,400.00	Union	$6,500.00
Henry	$33,600.00	Van Buren	$625.00
Hickman	$11,940.00	Warren	$30,100.00
Houston	$3,350.00	Washington Hub / Sullivan,Johnson,Unicoi,Carter,Greene	$246,644.00
Humphreys	$11,400.00	Wayne	$5,500.00
Jackson	$4,000.00	Weakley	$19,900.00
Jefferson	$14,600.00	White	$22,700.00
Johnson	see Hub	Williamson	$150,000.00
Knox	$378,500.00	Wilson	$51,000.00
Lake	$1,800.00	**Total**	**$4,442,610.00**

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